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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,455	03/23/2004	Kazutoshi Higashiyama	A8319.0013/P013-A	1223

24998 7590 08/07/2008
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EXAMINER

WILLS, MONIQUE M

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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08/07/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/806,455	Applicant(s) HIGASHIYAMA ET AL.	
	Examiner Monique M. Wills	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5 and 16-24 is/are pending in the application.
- 4a) Of the above claim(s) 18 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,16,17 and 20-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/11/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 1, 5, 16-17 & 20-24 in the reply filed on May 3, 2007 is acknowledged.

Claims 18-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected a distributed power source for homes, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 3, 2007.

Claim Rejection- 35 USC 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5, 16 & 21-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamaoka *et al.* (US 6,613,465).

Yamaoka *et al.* disclose a fuel cell (1), which produces electric power using hydrogen, and which may be of the solid polymer electrolyte type (column 5, lines 20-25). The hydrogen is supplied by a reformer (4), which would correspond to the present “reaction part”, and in which both steam reforming (column 4, lines 54-60) and partial oxidation reforming (column 5, lines 5-10) occur. The hydrogen may be produced at two different set values corresponding to two different raw fuel input flow rates (figure 6). The temperature within the reformer is maintained substantially constant, and thus within a temperature range, by balancing the two reformation reactions (column 5, lines 1-4). Since air is sent into the reformer by a pump (13), this balancing would be done by controlling the amount thereof. Thus, the flow of air (which contains oxygen and is thus an oxidant) is varied and controlled to maintain the reaction part within a narrow range of temperature. The raw fuel, or “at least one type of material”, is a liquid mixture of methanol and water (column 4, lines 49-50), which would be a solution.

Claim Rejection- 35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka *et al.* in view of Fronk (US 2002/0048698).

This claim differs from Yamaoka *et al.* by reciting methane as a raw material for the “reaction part”. Fronk discloses hydrocarbons of the formula C_nH_{2n+2} as suitable raw fuels for a fuel cell system with a reformer, the simplest of these being methane ($n=1$), and as alternatives to methanol (section 0022). For this reason, and since the use of a gaseous hydrocarbon would reduce the heating demand of the evaporator (7) disclosed by Yamaoka *et al.*, it would be obvious to use the hydrocarbons such as methane disclosed by Fronk as the raw hydrocarbon fuel in the fuel cell system of Yamaoka *et al.*

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka *et al.* in view of Edlund *et al.* (US 6,383,670).

This claim differs from Yamaoka *et al.* by reciting a hydrogen storage means at the outlet of the hydrogen-producing device. Edlund *et al.* disclose a fuel cell system which includes a hydrogen producing device (16) including an outlet (54) and a hydrogen storage device (56). Because this would allow some of the hydrogen to be used elsewhere when the load demand on the fuel cell is low, it would be obvious to use a hydrogen storage device as shown by Edlund *et al.* in the fuel cell system of Yamaoka *et al.*

Response to Amendment

Applicants response with respect to the 35 USC 112 first paragraph rejection filed September 8, 2006 is persuasive and the rejections are overcome.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair->

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direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Monique M Wills/
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795